

SOME OPISTHOBRANCHIA (CLASS GASTROPODA) NEW TO AUSTRALIA OR OTHERWISE OF INTEREST

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Following my usual practice when possible, colour sketches and notes were made at the respective times some of the following species of Opisthobranchia were brought under my notice. These have been used in the preparation of this short paper, particularly in placing the first two species on record from Australia for the first time.

Family PLEUROBRANCHIDAE

OSCANIUS MAMILLATUS Quoy and Gaimard

(Figure 1)

Oscanius mamillatus Quoy and Gaimard, 1833, Voy. "Astrolabe," Zool. II, p. 294, pl. 22, f. 6. Port Louis, Mauritius.

Animal very large, soft and tubercular, with a few larger conic tubercles scattered in places on the dorsal surface. Head tentacles united at the base; foot broad, rounded, and extended only very slightly behind when the animal was immobile. The animal was remarkable for its colour and pattern. General colour was light creamy fawn to palest pink in places, with large dark brown patches at intervals round the mantle edge. The tubercles were variegated with brown and yellow, and the intervals between them were reddish brown and yellow, with dark brown, irregular rings round the basal parts of the larger conic tubercles. Conspicuous along the mantle, head, and scattered elsewhere on the brown marginal patches were small white blotches and spots. These gave a peculiar "frothy" appearance to the animal on first glance, which temporarily detracted somewhat from its true appearance. Outstanding colour marking was that of a number of conspicuous, roughly crescent shaped splashes of crimson lake scattered here and there over the dorsal surface, with somewhat darker edges. Tentacles were dark brown outlined with darker red-brown.

Length of animal: Approximately 6 inches; *breadth:* 4½ inches.

Locality: Gunnamatta Bay, Port Hacking, south of Sydney, Australia. Amongst seaweed on the tidal flat at lowest tide level. 1st April, 1946.

Remarks: A large number of these was noticed by officers of the C.S.I.R.O. Fisheries Division (Gunnamatta Bay), who recognised them as "new arrivals" to the tidal flat there, but by the time I was notified the returning tide had swept them from sight. However, the following day a few more were seen on the flat at low tide, and one was collected and sent to me for identification. By the time I was available to go down myself, they had completely vanished, and, despite periodic searching, they do not appear to have been seen since that time to my knowledge. Their habitat is obviously well below low tide level. The plum-coloured *Oscanius hilli* Hedley was also about the flat in numbers at that time. Although permitting recognition of this species on sight, Quoy and Gaimard's figure indicates that the larger conic tubercles are more erect than in the specimen I had before me, but this was no doubt due to the soft, sluggish state in which the latter was found at Gunnamatta Bay. The tissues were extremely

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soft, and the larger tubercles were relaxed and lying almost immersed amongst the smaller ones.

It is herewith recorded for the first time from Australia, and, as far as I know, from the Pacific.

Family **POLYCERIDAE**

CRIMORA LUTEA Baba

(Figure 2, 2a)

Crimora lutea Baba, 1949. *Opisthobranchia of Sagami Bay* (Tokyo), pp. 133-134, pl. X, f. 35. Off Kurosaki, Sagami Bay, Japan.

The species recorded here as an Australian record resembles Baba's figure and description closely, except apparently in size. The yellow to orange ground colour, blue-black spots and papillae, similar tufted blackish outgrowths along the dorsal centre of the tail, the dark gills on two projections from the back flanked on each side by two yellow protuberances, and the expanded head veil with blackish outgrowths, coincide well with the Japanese species. I noticed a peculiar feature on the two specimens forwarded to me (one much smaller) was a series of small compartments or pockets running down each side of the foot sole for about one-third its length (2a). I have no recollection of seeing that exactly on any nudibranch before, and neither Alder and Hancock (1862, *Ann. Mag. Nat. Hist.* 3, X, pp. 261-265) in their description of their genus *Crimora*, in which Baba places his species, or Baba himself mentions them, yet they are of some consequence in the specimens in question, I feel sure. A letter of mine to Dr. Baba (Tokyo) in 1956 regarding this feature has been recently returned to me marked "unknown."

Length of animal: In preservative 3 inches, smaller specimen one inch. Baba gives the length of his species as 3 mm., which may be a mistake, as that seems very minute, although his figure gives the impression it is only small.

Locality: Rodd's Harbour, Port Curtis, Queensland. In sandy mud, in small rock pool left by tide at very low level. Collected by John Bates, 8th June, 1952.

THECACERA PENNIGERA (Montagu)

(Figure 3, 3a)

Doris pennigera Montagu, 1815. *Trans. Linn. Soc. (Lond)*, XI, 17, pl. IV, f. 5, Devon, England.

Thecacera pennigera Fleming, 1828. *Hist. Brit. Anim.*, 283.

Thecacera pennigera Alder and Hancock, 1855. *British Nudibranchiate Mollusca*, Mon. Fam. I, pl. XXI, f. 7.

The species *Thecacera pennigera* (Montagu) cannot be mistaken, and it must have been introduced into Australia in very recent years. A brief mention of it was made by Mr. F. E. Allen (1952, *Austr. Journ.*, Mar. *Frhwat Res.*, 4(2), 307, 308), after I had confirmed its identification, but as I prepared a colour sketch at the time and a few notes which are available for reference, I am now elaborating on Mr. Allen's brief mention of the species.

The animal has a delicate, gelatinous white body, profusely marked with bright orange spots and dashes, with velvety black ones between them; large orange patches of the gills, round rhinophores, on dorsal protuberances, and posterior to the gills on each side. Tail is long and

pointed, the tip of which the animal uses to extend and balance itself from an object to which it may be clinging. Foot sole sparsely dotted with orange and black spots. Rhinophores set in widely expanded sheaths. Three tripinnate gills arise from a common stalk on the dorsal surface. All the above features are in common with those in the British species. Branchial appendages are set a little behind and on each side of the branchia.

Length of animal: Alive $1\frac{1}{2}$ inches.

Locality: Found at White Bay Power Station, upper reaches of Sydney Harbour, Australia, 28th July, 1951. Collected by Miss B. Dew, C.S.I.R.O. Fisheries Division, during sea-water conduit inspections.

Remarks: An active, brilliantly marked animal unlike any other known species occurring here. The specimen brought to me, of which I made a colour sketch at the time, lived actively in a jar of seawater until 7/8/51.

During that time it laid an irregular creamy-yellow egg-girdle (3a). Some days later Miss Dew found more specimens of the species breeding in the same locality. Its appearance, or more correctly its observance in Sydney Harbour, was certainly a surprise, but obviously shipping played a strong part in its introduction from overseas. Certain molluscs of the Indopacific do appear at intervals in Australia, but a British species that survives and breeds under such different conditions is of interest especially to the student of marine zoogeographical problems.

As I said above, a brief mention of observing this nudibranch in Sydney Harbour for the first time was made by Mr. F. W. Allen, but above notes and illustration further substantiate his record of it in South Pacific waters.

Family **PHYLLIDIIDAE**

PHYLLIDIA ELEGANS Bergh

Phyllidia elegans Bergh, 1896. *Bidrab til en Monograph of Phylliderni, Naturhist. Kjobenhavn, Ser. 3, Vol. V, pp. 357-542, Tab. XVIII B, XIX, Philippines.*

Locality: Hayman Island, Queensland. Collected A. W. C. de Witte, August, 1956.

This specimen of nudibranch was exhibited by Dr. D. F. McMichael at the August monthly meeting of the Linnean Society of New South Wales last year as a new specific record for Australia. Notification of it appeared in *Abstr. 662, P.L.S.N.S.W., 29th Aug., 1956*, and later (1957 *Proc. Linn. Soc., 81, 3, 316-317*) in the same abstract form. The genus is already recorded from Western Australia, where *Phyllidia varicosa* Lamarck, 1801, is listed from Dampier Archipelago. Whether that species in Western Australia has been correctly named remains to be seen. It may later be found that the two species, from east and west of the continent, are the same species, which is not unlikely. The species *P. varicosa*, which Eliot (*Some Nudibranchs from East Africa and Zanzibar, 1904, Proc. Zool. Soc., Lond., 268-298*) described as having a broad black line running along the foot (sole) and is absent from several other species of *Phyllidia*, I believe is close to the species *P. elegans*. A detailed comparison between the so-called Western Australian *P. varicosa* and the Queensland species recorded as *P. elegans*, which incidentally has the same black line on the foot sole, would confirm their true identification, and their relationship, if any other than generic, to one another.

As it now stands, *P. elegans* Bergh, is a specific record for Australia and a generic record for all Australia except Western Australia.

Family DORIDIDAE

GLOSSODORIS WESTRALIENSIS O'Donoghue

Glossodoris westraliensis O'Donoghue, 1924. *Trans. Linn. Soc., Lond.*, XXXV, pp. 554-556, Abrolhos, Western Australia.

Locality: Hayman Island, Queensland. Collected by A. W. C. de Witte, August, 1956.

This specimen from Queensland was exhibited also by Dr. D. F. McMichael at the August monthly meeting of the Linnean Society last year, and was recorded in the same Abstracts as a new record for Queensland. The species *Glossodoris westraliensis* has hitherto been recorded from Western Australian localities only. It may be found eventually in North Australia, thus providing the species with a more continuous range than the rather interrupted one this eastern record sets.

Dr. McMichael brought this to my attention recently in the Australian Museum as an interesting eastern record. The specimen is typical in size, colour, pattern and general structure of the Western Australian form, of which I have already given a colour illustration (*Australian Shells*, 1950 pl. 28, f. 11), and further description is not necessary here.

Family FLABELLINIDAE

FLABELLINA IANTHINA Angas

Flabellina ianthina Angas, 1864. *J. de Conch.*, ser. 5, Tom. iv., p. 66, pl. VI, f. 6. Watson's Bay, Sydney Harbour (Port Jackson), Australia.
? *Pteraeolidia semperi* Baba, 1949. *Opisthobranchia of Sagami Bay* (Tokyo).

The ability of this nudibranch to display at intervals beautiful and brilliant luminosity with a constant colour change is remarkable. It can be olive-green or blue or completely liver coloured, but can quickly change to opalescent violet and violet-blue shades, in which state it becomes a creature of great beauty. It is probably the largest of the Aeolid Nudibranchia found in Australia, and also one of the rarer ones.

Fortunately, I had a living specimen of this in the Australian Museum when I received a copy of *Opisthobranchia of Sagami Bay* (Tokyo), 1949, in which Dr. Baba (p. 182, pl. XLIX, p. 165) describes and gives a good illustration of a specimen he identifies as *Pteraeolidia semperi* (Bergh), 1870. The Sydney species during its captivity showed several changes, finally becoming partly, then completely, olive-fawn, progressing from that to an all-over violet-blue greenish shade, similar to that which Baba shows in his illustration, which, when compared with the former, would give the impression it had been prepared from the actual living specimen from Sydney. Taking external features into consideration, and finally the unusual violet-blue with a tinge of green colour, leads me to think that the Japanese species is the same as *Flabellina ianthina* Angas, 1864, one of our rarer Aeolid Nudibranchia. I am therefore synonymizing them tentatively, and, if I am correct in this, the latter name has priority over that given to the Japanese species.



AUSTRALIAN OPISTHOBRANCHIA

Fig. 1—*Oscanius mamillatus* Q. and G.

Fig 2, 2a—*Crimora lutea* Baba.

Fig. 3, 3a—*Thecacera pennigera* (Montagu).